



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of

FUNDA et al

Atty. Ref.: 4662-121; Confirmation No. 2120

Appl. No. 10/564,635

TC/A.U. 1619

Filed: January 13, 2006

Examiner: Greene

For: POWDEROUS FORMULATIONS OF FAT-SOLUBLE ACTIVE INGREDIENTS

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**EVIDENTIARY DECLARATION UNDER 37 CFR §1.132**

I, Elger Manuel Funda, hereby declare as follows:

1. That I am a joint inventor of the subject application, am a citizen of Germany and my address is as stated in our Declaration under Rule 63 (37 CFR §1.63) of record in the subject application.

2. That I am employed by DSM Nutritional Products Ltd. and have assigned my rights in the subject application to DSM IP Assets B.V.

3. That attached hereto is my curriculum vitae.

4. That the following experiments were conducted under my supervision:

Five formulations (X-linked and comprising vitamin A acetate) were prepared analogous to example 1 of the present patent application. After production, these formulations were stored at a temperature of 40 °C in an open container. The concentration of vitamin A was measured at the start, after 2, 4, and 8 weeks.

The following table summarizes the results:

Stability [%]	Gelatine	Milk protein (Na- caseinate)	Rape seed protein	Soy Protein	Rice protein
Initial	100	100	100	100	100
2 weeks	96.3	92.0	71.5	91.6	67.4
4 weeks	89.5	83.4	67.0	80.2	62.1
8 weeks	76.4	77.0	59.8	46.4	57.4

We also attempted to use wheat proteins, but it was not possible to produce a stable emulsion and therefore a dry powder could not be produced at all. Based upon these experiments as well as my own experience in the field of enzymatic hydrolysis and crosslinking of proteins to increase their functional properties I conclude that the milk protein is very similar to gelatine, but significantly and surprisingly better than the other proteins.

5. We declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: July 16<sup>th</sup> 2010

  
Elger Manuel Funda

***Curriculum vitae***

Name: Elger Manuel Funda  
Birthplace: Stuttgart (Germany)  
Date of birth: 5<sup>th</sup> November 1966  
Nationality: German

**Degrees**

Abitur, Ludwigsburg (Germany), 1985  
Diploma in Chemistry, University of Stuttgart (Germany), 1994  
PhD in Chemistry, University of Stuttgart (Germany), 1998, magna cum laude

**Professional experience**

1998-2001 Scientist at Fraunhofer Institute for Process Engineering and Packaging,  
Freising (Germany)  
2001- Formulation Scientist at DSM Nutritional Products / Roche Vitamins,  
Basel/Kaiseraugst (Switzerland)

**Major research interests**

Formulation and encapsulation of active ingredients for food-, feed- and pharma-  
applications. Formulation and encapsulation technologies.  
Raw materials for formulations.  
Enzymatic hydrolysis and crosslinking of proteins for improvement of techno-functional  
properties

**Professional Organizations**

Gesellschaft Deutscher Chemiker